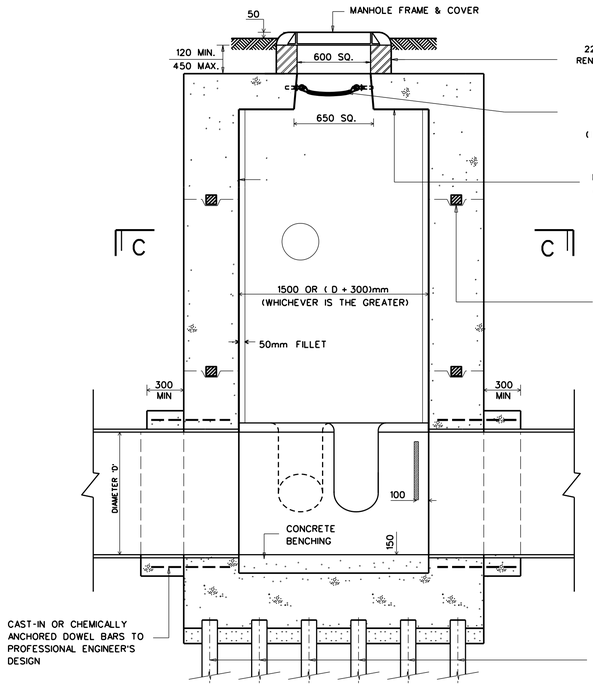
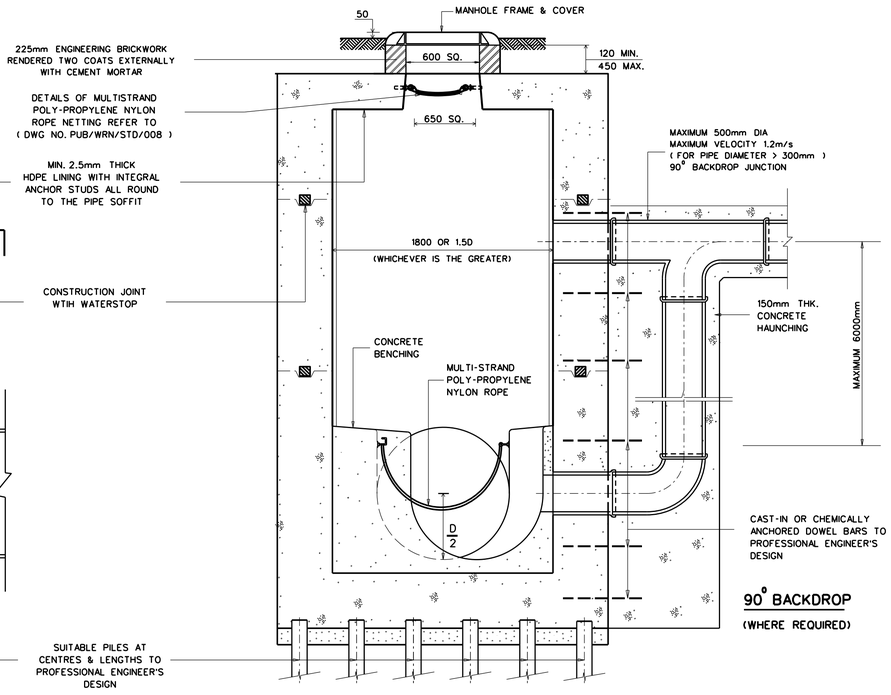
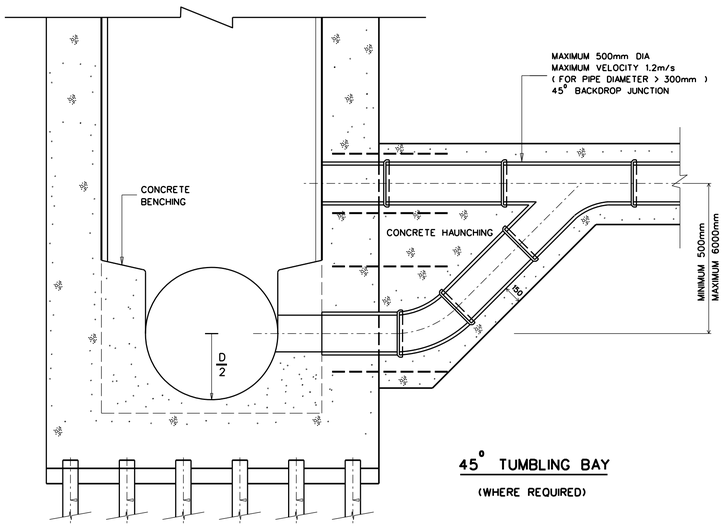


SECTION A-A



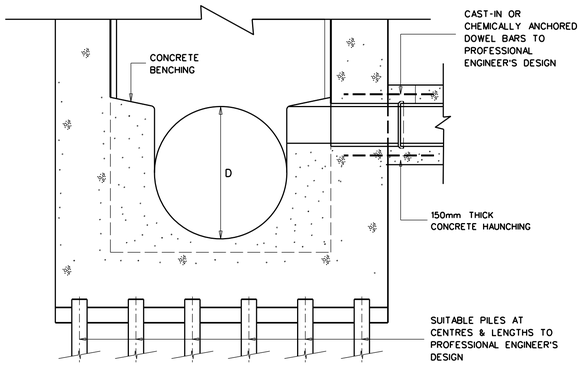
90° BACKDROP

(WHERE REQUIRED)



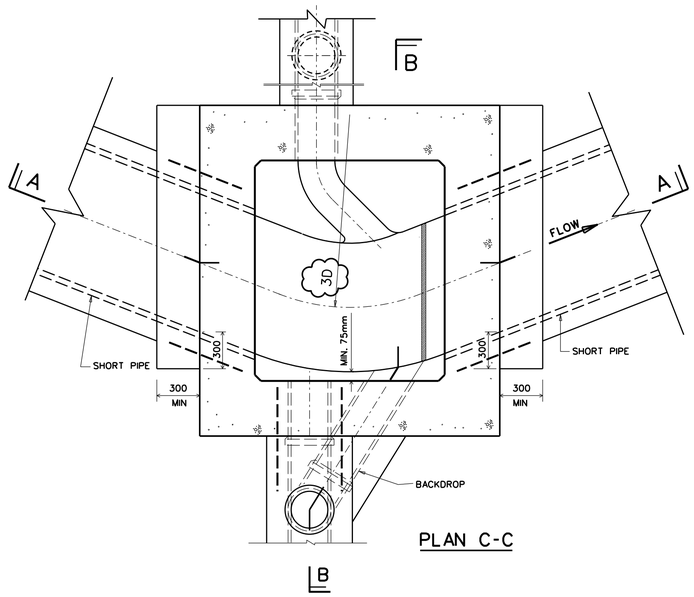
45° TUMBLING BAY

(WHERE REQUIRED)

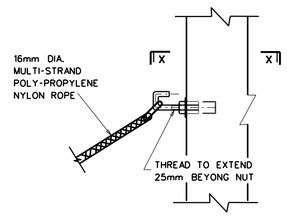


STRAIGHT-IN CONNECTION

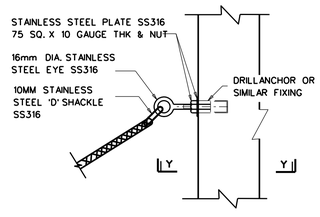
(WHERE REQUIRED)



PLAN C-C



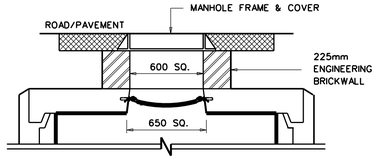
ELEVATION Y-Y



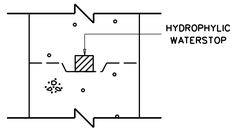
PLAN X-X

DETAIL OF SAFETY CHAIN

NOT TO SCALE



MANHOLE FRAME & COVER
ON ROAD/PAVEMENT



WATERSTOP
DETAIL

NOTES.

1. ALL STRUCTURAL CONCRETE GRADE SHALL BE MINIMUM C28/35.
2. ALL CONCRETE GRADE FOR HAUNCHING AND BENCHING SHALL BE C20/25.
3. ALL CONCRETE COVER TO REINFORCEMENT SHALL BE MINIMUM 50mm DEPENDENT ON SOIL CONDITIONS.
4. MANHOLES EXCEEDING 6.0m DEEP TO INVERT, SHALL BE DESIGNED SEPARATELY.

AMENDMENTS
B 1. CAST IRON FRAME AND COVER TO MANHOLE FRAME AND COVER.
2. MIN 2.5mm THICK HDPE LINING ADDED TO MANHOLE WALLS WITH INTEGRAL ANCHOR STUDS ALL ROUND.
3. HEIGHT OF BRICKWALL TO EXCLUDE MANHOLE FRAME THICKNESS.
4. DETAILS OF MANHOLE FRAME AND COVER ON ROAD/PAVEMENT AND ON TURF UPDATED.
5. SUITABLE PILES AT CENTRES AND LENGTHS AT ALL MANHOLE SECTIONS ARE TO BE DESIGNED BY PROFESSIONAL ENGINEER.
6. WATERSTOP DETAIL ADDED.
7. MAX ALLOWABLE PIPE DIAMETER AMENDED AND VELOCITY ADDED FOR BACKDROP AND TUMBLING BAY DETAILS.
8. MINIMUM 300mm CONCRETE HAUNCHING WITH CAST IN OR CHEMICALLY ANCHORED DOWEL BARS WRAP ROUND THE HAUNCHING ADDED.
9. STAINLESS STEEL GRADE (SS316) ADDED.
10. MINIMUM HEIGHT OF BACKDROP REVISED TO MAXIMUM HEIGHT OF 6000mm.
11. NOTES REVISED.
12. MAXIMUM HEIGHT OF TUMBLING BAY REVISED.
13. STAINLESS STEEL SAFETY CHAIN REMOVED.
14. SECTION A-A, B-B MANHOLE BRICK AND OPENING ARRANGEMENT REVISED.
15. PIPE BEND RADIUS 3D TO CENTRELINE.

SCALES
1 : 25
UNLESS
OTHERWISE
STATED
(A1)

STANDARD 45° BEND MANHOLE FOR SEWERS 1000mm DIA. AND ABOVE

PUB SINGAPORE'S NATIONAL WATER AGENCY

WATER RECLAMATION (NETWORK) DEPARTMENT

DRG. NO. PUB/WRN/STD/004B

[ORIGINAL BORDER SIZE 810mm X 565mm]